

CENTER FOR HEALTH  
INFORMATION AND ANALYSIS

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**METHODOLOGY PAPER**  
**MASSACHUSETTS TOTAL**  
**HEALTH CARE EXPENDITURES**

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## INTRODUCTION

Total Health Care Expenditures (THCE) is a measure that represents the total amount paid by or on behalf of Massachusetts residents for health care services covered by public and private health insurance. The Center for Health Information and Analysis (CHIA) is statutorily mandated to report annually on THCE and compare its growth against the health care cost growth benchmark set forth by the Health Policy Commission (HPC). THCE is defined as the annual per capita sum of all health care expenditures in the Commonwealth from public and private sources, including: (i) all categories of medical expenses and all non-claims related payments to providers, as included in the health status adjusted total medical expenses (TME) reported by CHIA; (ii) all patient cost-sharing amounts, such as deductibles and copayments; and (iii) the net cost of private health insurance, or as otherwise defined in regulations promulgated by CHIA.<sup>1</sup>

This paper provides an overview of the components and data sources of THCE and describes CHIA's methodologies in calculating THCE and its growth.

## DATA AND METHODOLOGY

CHIA is required to report on THCE annually, by September 1, to monitor the rate of growth and measure the Commonwealth's progress toward meeting its health care cost growth benchmark. This statutorily-mandated timeline impacts the model design and approach, as claims payments are often not finalized until several months after the close of the calendar year. As a result, the THCE timeline does not provide enough time for full claims run-out, provider quality and cost performance evaluation, and financial settlements for the performance year. In order to report on THCE within the timeline required, estimates of claims run-out and provider settlements are incorporated into the calculation of THCE. In recognition of this use of estimated data, CHIA conducts an initial assessment, released 9 months after the close of the performance year, and a subsequent final assessment, which is released 12 months after the initial assessment. The final assessment contains the same elements as the initial assessment but provides updated information with full claims run-out and final settlement amounts.

**Table 1. Example of THCE timeline**

Publication Date	Assessment of Performance Year		
<b>September 2014</b>	Initial Assessment of Performance Year 2013 (Δ 2012-2013)		
<b>September 2015</b>	Final Assessment of Performance Year 2013	Initial Assessment of Performance Year 2014 (Δ 2013-2014)	
<b>September 2016</b>		Final Assessment of Performance Year 2014	Initial Assessment of Performance Year 2015 (Δ 2014-2015)

<sup>1</sup> Defined in M.G.L. c. 12C, Section 1.

A critical requirement of the THCE calculation is data that can be reliably and timely sourced year over year. Accordingly, CHIA has identified data sources that best meet its statutory requirements. In the broadest view, these sources embody three major categories of health care spending in Massachusetts: private health insurance, public coverage and programs, and the net cost of private health insurance. These categories are further broken down to their individual elements and sources. The dollar amounts from these categories for a given calendar year are summed to represent the value of THCE for that year. This THCE value is then divided by the number of Massachusetts residents as reported by the Census Bureau for that given calendar year to establish a per capita value of THCE. Detailed information on the model elements is discussed below.

## Private Health Insurance

In accordance with the statutory requirements of THCE, the model includes expenditures by commercial payers on behalf of Massachusetts residents, including both the fully-insured and self-insured populations. The primary data source for the expenditures of the commercially insured is the TME data, which is filed directly with CHIA by major commercial payers in the Massachusetts private health insurance market,<sup>2</sup> as well as commercial payers that offer Medicare Advantage plans, MassHealth Managed Care Organization (MCO) plans, and Commonwealth Care plans.<sup>3</sup> TME data filed by payers each May includes preliminary data from the previous calendar year, as well as final data from the year that ended 16 months prior. Preliminary TME data includes paid claims available to the payers at the time of the submission; while final TME has up to 16 months of claims run out and finalized performance payment settlements. In order to report preliminary TME data that is complete and comparable to the previous year's TME data, payers apply completion factors, which include payer estimates for the cost of services that have been incurred but not reported (IBNR) by service category. Payers submit this data based on "allowed amounts", which include payer paid amounts as well as patient cost-sharing, such as co-payments, co-insurance, and deductibles.

In some circumstances, payers are only able to report claim payments for limited medical services due to benefit design, where some services such as behavioral health or pharmacy services may be "carved out" or provided separately by other benefit providers (e.g., by a pharmacy benefit manager, or PBM). In these instances, payers are unable to obtain the payment information and do not hold the insurance risk for the carved-out services. Thus, payers report this type of TME data separately in the commercial partial-claim category.<sup>4</sup> To estimate the TME amount of the full benefit for the commercial partial-claim population, CHIA makes actuarial adjustments based on the reported partial-claim TME data. These adjustments are made by first calculating health status adjusted (HSA) TME per member per month (PMPM) and the HSA PMPM amount for each service category for each applicable payer's commercial partial-claim data.<sup>5</sup> Next, CHIA calculates HSA TME PMPM from the payer's commercial full-claim population adjusting for the risk scores of the TME partial-claim population and the HSA PMPM amount by service category. For service categories where the HSA PMPM amount of the partial-claim population exceeds that of the HSA PMPM amount of the full-claim population, the reported amount is used. For the remaining service categories, the HSA PMPM amount is adjusted to represent the same proportion of TME as the commercial full-claim population, with excess non-claims redistributed to the other service categories. It is anticipated that the partial-claim population is primarily from the payer's administrative service only (ASO) business for the self-insured accounts, in which non-claim based payments are uncommon. If the HSA PMPM amount for each service category of the partial-claim population is less than that of the full-claim population basing on the risk scores of the partial-claim population, CHIA uses the HSA PMPM amounts of the full-claim population for all service categories.

<sup>2</sup> These payers account for approximately 99% of the Massachusetts private health insurance market.

<sup>3</sup> A full list of payers required to submit TME data to CHIA can be found here: <http://chiamass.gov/list-of-payers-required-to-report-data>.

<sup>4</sup> Please see CHIA's regulation 957 CMR 2.00 for the submission requirements of TME data.

<sup>5</sup> As defined in 957 CMR 2.00, service categories of TME data include: hospital inpatient, hospital outpatient, professional physician, professional other, pharmacy, other, and non-claim payments.

To include expenditures from the commercial payers with smaller market shares in Massachusetts that are not required to submit the TME data, CHIA utilizes expense information from medical loss ratio (MLR) reports filed with the Centers for Medicare and Medicaid Services (CMS). Only commercial payers with established Massachusetts contracts will be included in the calculation, as THCE is intended to capture health care expenditures for Massachusetts residents only. To estimate the proportion of the reported spending that applies to Massachusetts residents, CHIA uses the hospital discharge data to estimate the proportion of hospital inpatient discharges that are non-Massachusetts residents. This proportion is then applied to the reported spending to exclude the estimated proportion of expenditures on behalf of non-Massachusetts residents. This approach ensures that THCE includes expenditures from all private insurance plans that are licensed to sell health insurance in Massachusetts.

## Public Coverage

THCE also includes the expenditures from public health insurance and programs, including MassHealth programs and its Managed Care Organization (MCO) plans, Commonwealth Care MCO plans, Medicare traditional fee-for-service plans (Parts A, B & D), Medicare Advantage plans, Health Safety Net (HSN), the Medical Security Program, and Veteran Affairs. Further detail on each public program and its data source is described below.

### Medicare

Medicare is a health insurance program for people age 65 or older, people under 65 with certain disabilities, and people of all ages with End-Stage Renal Disease. The Medicare data source available for use in CHIA's THCE calculation varies depending on the type of Medicare program.

Medicare Part A covers inpatient hospital services, skilled nursing services, home health care, and hospice care. Medicare Part B provides coverage for outpatient hospital services, physician services (e.g., office visits and surgeries), laboratory tests, and durable medical equipment (e.g. wheelchairs and walkers). Medicare beneficiaries can also obtain prescription drug coverage through the Medicare Prescription Drug Plan (Part D) offered by private companies or as part of a Medicare Advantage plan. The primary data source for Massachusetts beneficiaries' expenditures from Medicare Parts A, B and D is aggregated, summary statistics provided to CHIA by CMS.

The Medicare Advantage plan (Part C) is a type of Medicare health plan offered by a private health insurance company that contracts with Medicare to provide beneficiaries with all Part A and Part B benefits. Most Medicare Advantage plans also include prescription drug coverage. The primary data source for the Medicare Advantage plans comes from the TME data submitted directly to CHIA by commercial payers offering these products.

### MassHealth and Commonwealth Care

MassHealth is a state-run public health insurance program for certain eligible low income residents of Massachusetts. It is Massachusetts' Medicaid program and Children's Health Insurance Program (CHIP) combined into one. MassHealth is a joint state and federal insurance program that offers various coverage types based on eligible members' income, health status, and other factors. In Massachusetts, Medicaid-eligible residents can choose to enroll in a MassHealth MCO which is a private health plan that contracts directly with providers and manages the care of its members

Commonwealth Care is a state insurance program which provides coverage to low and moderate income residents up to 300% of the federal poverty level, who otherwise do not have health insurance, through MassHealth. The plans are offered by several private health insurance companies. Under the Patient Protection and Affordable Care Act, Commonwealth Care did not enroll new members in 2014 and was ended in January 2015, as eligible members would qualify for other public programs or premium tax credits.<sup>6</sup>

For the purposes of calculating THCE, the primary data source for both MassHealth MCOs and Commonwealth Care MCOs comes from these private health insurance companies who submit TME data directly to CHIA.

<sup>6</sup> Commonwealth Care ended when the Affordable Care Act took effect on January 1, 2014. However, some members were granted temporary extensions of their Commonwealth Care coverage until January 2015 while the Commonwealth Health Insurance Authority (Connector) addressed the issues of the health insurance exchange website.

In addition to receive health coverage through a private MCO plan, alternatively, MassHealth members may elect to participate in the MassHealth managed Primary Care Clinician (PCC) plan. Some members, in specific situations, may enroll in non-managed care plans, which are referred to as the Fee-for-Service (FFS) plans. Information on expenditures for these MassHealth directly managed programs as well as non-claim based payments to providers is provided to CHIA by MassHealth.

MassHealth also offers two types of managed care programs for eligible seniors: the Senior Care Options (SCO) program and the Elder Service Plans as part of the Programs of All-inclusive Care for the Elderly (PACE/ESP). SCO is a comprehensive health plan that covers all of the services reimbursable under Medicare and MassHealth through a senior care organization and its network of providers. The SCO program covers an integrated and complete package of health care and social services for eligible low-income seniors aged 65 or older. The PACE/ESP program, which functions as both provider and plan, provides comprehensive medical and social services to eligible members aged 55 or older so they can live in their own homes and communities instead of in nursing homes. In October 2013, MassHealth launched a managed care program, named One Care, for qualified members aged 21 to 64 who are dually eligible for MassHealth and Medicare. Data for SCO, PACE, and One Care is provided to CHIA by MassHealth.

### Health Safety Net

The Health Safety Net (HSN) pays acute care hospitals and community health centers for medically necessary health care services provided to eligible low-income uninsured and underinsured Massachusetts residents. The HSN also reimburses Massachusetts acute hospitals for a portion of the cost of emergency department services provided to uninsured patients when the patients' accounts prove uncollectable. The primary data source for these expenditures is provided to CHIA by MassHealth.

### Medical Security Program

The Medical Security Program (MSP) is for Massachusetts residents who are receiving unemployment insurance benefits. The MSP provides assistance with the cost of existing health insurance premiums or by covering the cost of actual medical expenses. The primary data source for MSP comes from the TME data submitted directly to CHIA by commercial payers offering these products. MSP benefits were terminated in 2014.

### Veterans Affairs

Veterans Affairs covers health expenditures made on behalf of veterans living within Massachusetts. The primary data source for this element will be the annual reported expenditures of "Medical Care" by the National Center for Veteran Analysis and Statistics.<sup>7</sup>

**Table 2. Data Sources for Public Coverage**

Program	Data Source
MassHealth MCOs	Reported by commercial payers to CHIA
Commonwealth Care MCOs	Reported by commercial payers to CHIA (ended in early 2015)
MassHealth (PCC, FFS, SCO, PACE, One Care, and other)	MassHealth data summary to CHIA
Medicare Advantage	Reported by commercial payers to CHIA
Medicare Parts A, B and D	CMS data summary to CHIA
Health Safety Net	MassHealth data summary to CHIA
Medical Security Program	Reported by commercial payers to CHIA (terminated in 2014)
Veterans Affairs	National Center for Veteran Analysis and Statistics

<sup>7</sup> Spending information from the Department of Veterans Affairs is available at <http://www.va.gov/vetdata/Expenditures.asp> (Last accessed: July 23, 2015).

## Net Cost of Private Health Insurance

The third component of THCE is the net cost of private health insurance (NCPHI).<sup>8</sup> This element captures the costs to Massachusetts residents associated with the administration of private health insurance. Chapter 224 defines NCPHI as “the difference between health premiums earned and benefits incurred, which shall consist of: (i) all categories of administrative expenditures, as included in medical loss ratio regulations promulgated by the Division of Insurance; (ii) net additions to reserves; (iii) rate credits and dividends; and (iv) profits or losses, or as otherwise defined by regulations promulgated by CHIA. CHIA will calculate NCPHI for all Massachusetts residents, both those who are covered by private health insurance licensed by the Massachusetts Division of Insurance (DOI), and those obtaining coverage through out-of-state insurance plans. NCPHI will also include residents enrolling in private managed care plans of Medicare and Medicaid, but will exclude out-of-state residents covered under Massachusetts-based insurance plans.

Because of substantial differences among segments of the Massachusetts health insurance market, NCPHI will be calculated on a PMPM basis separately for the five different market segments: (1) merged market; (2) large group fully-insured; (3) Medicare Advantage; (4) Medicaid MCOs and Commonwealth Care; and (5) self-insured. Each segment’s PMPM amount will then be multiplied by the estimated Massachusetts population in each segment to derive the total NCPHI. The methodology and data sources for the calculation of NCPHI for each market segment are described below.

### Merged Market

The merged market includes both individual and small group markets.<sup>9</sup> Data for administrative expenses in this market will be sourced from the Massachusetts medical loss ratio (MLLR) reports, filed directly by insurance carriers with DOI, where available. This data is reviewed by DOI and serves as the basis for actual rebates to consumers. For the merged market, NCPHI will be calculated as the direct premium earned less incurred claims less rebates paid plus allowable fraud deduction expense.

*NCPHI=*

*Direct Premium Earned - Incurred Claims - Rebate + Allowable Fraud Deduction Expense*

$$NCPHI\ PMPM = \frac{NCPHI}{(Life\ Years * 12)}$$

The MMLRs may not be available for the most recent year’s initial NCPHI calculation. Where the MMLR is not available, CHIA will utilize the Supplemental Health Care Exhibit (SHCE) from the National Association of Insurance Commissioners to derive the NCPHI of the merged market. The SHCE is available sooner than MMLRs, meeting CHIA’s timeline for the initial THCE calculation. The data elements that will be used in the calculation are detailed below, and for each data element CHIA will use the sum of the Individual and Small Group lines of business from SHCE:

*NCPHI=*

*Health Premiums Earned + Net Reinsurance Premiums Earned + Other Premium Adjustments + Risk Revenue - Total Incurred Claims + Deductible Fraud & Abuse Expense - Net Reinsurance Claims Incurred - Other Claims Adjustments - Estimated Rebates Unpaid Current Year*

$$NCPHI\ PMPM = \frac{NCPHI}{Member\ Months}$$

<sup>8</sup> The methodology of calculating NCPHI described in this section was developed by CHIA’s actuarial consultant from Oliver Wyman.

<sup>9</sup> M.G.L. c. 176J allows individuals to purchase coverage in the small group health insurance market (creating the “merged market”) and applies the small group insurance laws to both small group and individual plans. An employer who has 1 to 50 employees is eligible to purchase insurance in the small group market.

The 2014 net cost of private health insurance calculations rely on reported premiums from SHCE. For the merged market, beginning in 2014, statutory reported premium includes carriers' estimates of risk adjustment transfer payments. To the extent that the actual risk adjustment transfer payments, which are not known to the carriers at the time SHCE are completed, differ from their estimates included in the premiums, the merged market NCPHI calculations could be over or understated. In future reporting years, the prior year final NCPHI will be adjusted to reflect actual risk adjustment payments. The most recent year will reflect the estimated amounts.

### Large Group Fully-Insured Market<sup>10</sup>

CHIA will utilize the SHCE to derive the initial NCPHI of the large group fully insured market.<sup>11</sup> The SHCE is available sooner than federal MLR reports, meeting CHIA's timeline for the initial THCE calculation. The data elements that will be used in the calculation are detailed below:

*NCPHI=*

*Health Premiums Earned + Net Reinsurance Premiums Earned + Other Premium Adjustments + Risk Revenue - Total Incurred Claims + Deductible Fraud & Abuse Expense - Net Reinsurance Claims Incurred - Other Claims Adjustments - Estimated Rebates Unpaid Current Year*

$$NCPHI \text{ PMPM} = \frac{NCPHI}{Member \text{ Months}}$$

CHIA will use the federal MLR reports to calculate final NCPHI for the large group market. The data elements that will be used in the calculation are detailed below:

*NCPHI=*

*Premium as of March 31 - Total Incurred Claims as of March 31 + Allowable Fraud Reduction Expenses as of March 31 - Net Assumed Less Ceded Claims Incurred - Other Adjustments Due To MLR Calculations (Claims Incurred) - Estimated Rebates Unpaid Current Year*

$$NCPHI \text{ PMPM} = \frac{NCPHI}{Member \text{ Months}}$$

### Medicare Advantage

Medicare Advantage, Medicaid MCO and Commonwealth Care MCO plans are not separately reported in SHCE. Therefore, CHIA will use the Exhibit of Premiums, Enrollment and Utilization page of each insurance carrier's Annual Statutory Financial Statements for the state of Massachusetts, for those carriers that file the Health Annual Statutory Financial Statement.<sup>12</sup> The formula will be:

$$NCPHI \text{ PMPM} = \frac{Health \text{ Premiums Earned} - Amount \text{ Incurred for Provision of Health Care Services}}{Current \text{ Year Member Months}}$$

There is a minimum medical loss ratio requirement for Medicare Advantage plans starting in 2014. CHIA may reconsider the data source for the calculation of NCPHI for Medicare Advantage plans.

<sup>10</sup> In the calculation of NCPHI, a large group means an employer with more than 50 employees.

<sup>11</sup> In the future, CHIA may use "Annual Comprehensive Financial Statement for Carriers' Insured Health Plans" as filed with DOI once the availability and quality of the data meet the THCE reporting requirements. CHIA will work closely with DOI to ensure the data meets the requirements of NCPHI calculation.

<sup>12</sup> Each applicable insurance carrier's Annual Statutory Financial Statement State Page 29 (Massachusetts) will be used to derive NCPHI for Medicare Advantage. This data source reconciles to the audited nationwide financial statement (page 7), allowing for validation of accuracy.



### Medicaid MCO / Commonwealth Care MCO

CHIA will utilize a similar approach to that used for the Medicare Advantage program to calculate the NCPHI for Medicaid MCOs and the Commonwealth Care MCOs. The information from the Health Annual Statutory Financial Statements will be used to calculate the PMPM amount of NCPHI for Medicaid MCOs and Commonwealth Care MCOs.

CHIA assumes that Commonwealth Care NCPHI PMPM would be similar to Medicaid MCOs, as no separate Commonwealth Care data source could be determined. The proportion of the population enrolled in Commonwealth Care will be applied to this amount. The Commonwealth Care program was ended in 2015, so the future THCE calculation of this population's NCPHI will only include Medicaid MCOs and other applicable Health Connector programs.

$$\text{NCPHI PMPM} = \frac{\text{Health Premiums Earned} - \text{Amount Incurred for Provision of Health Care Services}}{\text{Current Year Member Months}}$$

### Self-insured

The NCPHI in the self-insured market will be calculated using the SHCE, which will meet CHIA's timeline for THCE calculation. The formula will be:

$$\text{NCPHI PMPM} = \frac{\text{Income from Fees of Uninsured Plans}}{\text{Member Months}}$$

For future years, CHIA will consider using self-insured data that is filed with DOI. At this time, however, DOI has expressed that the data quality may be a concern.

CHIA will use the federal MLR reports to calculate final NCPHI for the self-insured market. The data elements that will be used in the calculation are detailed below:

$$\text{NCPHI PMPM} = \frac{\text{Income from Fees of Uninsured Plans}}{\text{Member Months}}$$

**Table 3. Data Sources for NCPHI**

Market Segment	Data Source
Merged Market	Initial: Supplemental Health Care Exhibit Final: Massachusetts Medical Loss Ratio Reports
Large Group	Initial: Supplemental Health Care Exhibit Final: Federal Medical Loss Ratio Reports
Medicare Advantage	Annual Statutory Financial Statement
Medicaid MCO/Commonwealth Care	Annual Statutory Financial Statement
Self-insured	Initial: Supplemental Health Care Exhibit Final: Federal Medical Loss Ratio Reports

## CONCLUSION

The Massachusetts THCE measure is a first in the nation project that annually and systematically monitors the state's health care spending growth against a state-specific health care cost growth benchmark. The design and scope of CHIA's THCE model allows for identifying components that may threaten the Commonwealth's ability to meet cost containment goals. This type of evaluation is essential as Massachusetts continues to lead the nation in developing innovative solutions to health care delivery and financing challenges. CHIA will regularly update this document to reflect any changes to THCE data sources and methodologies.

*For CHIA's latest THCE publications, please visit: <http://chiamass.gov/total-health-care-expenditures/>.*

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